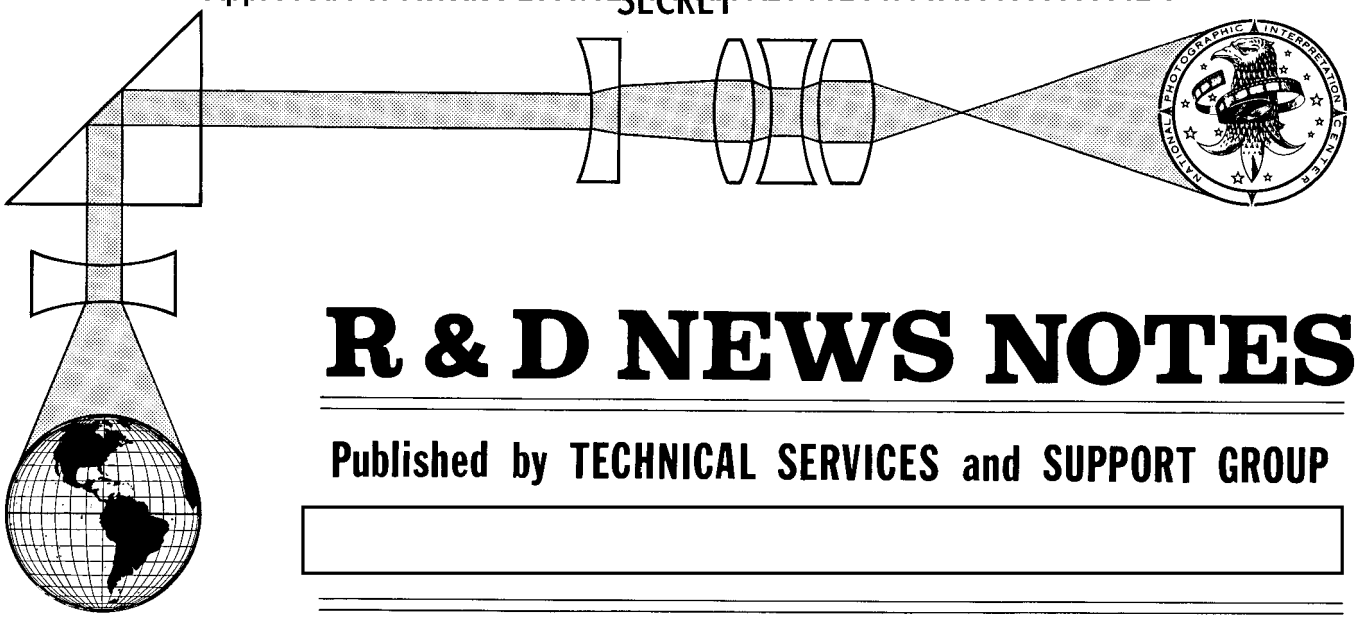


R & D NEWS NOTES

Published by TECHNICAL SERVICES and SUPPORT GROUP

[redacted] 25X1

March 1968

The following items have been taken from R&D progress reports of the Technical Services and Support Group and are being distributed because of their general interest. We would like to know what questions or problems you have concerning the items reported or any other R&D areas. A form is attached that will make it more convenient for you to submit your comments. An effort will be made to answer them either personally or in future R&D News Notes.

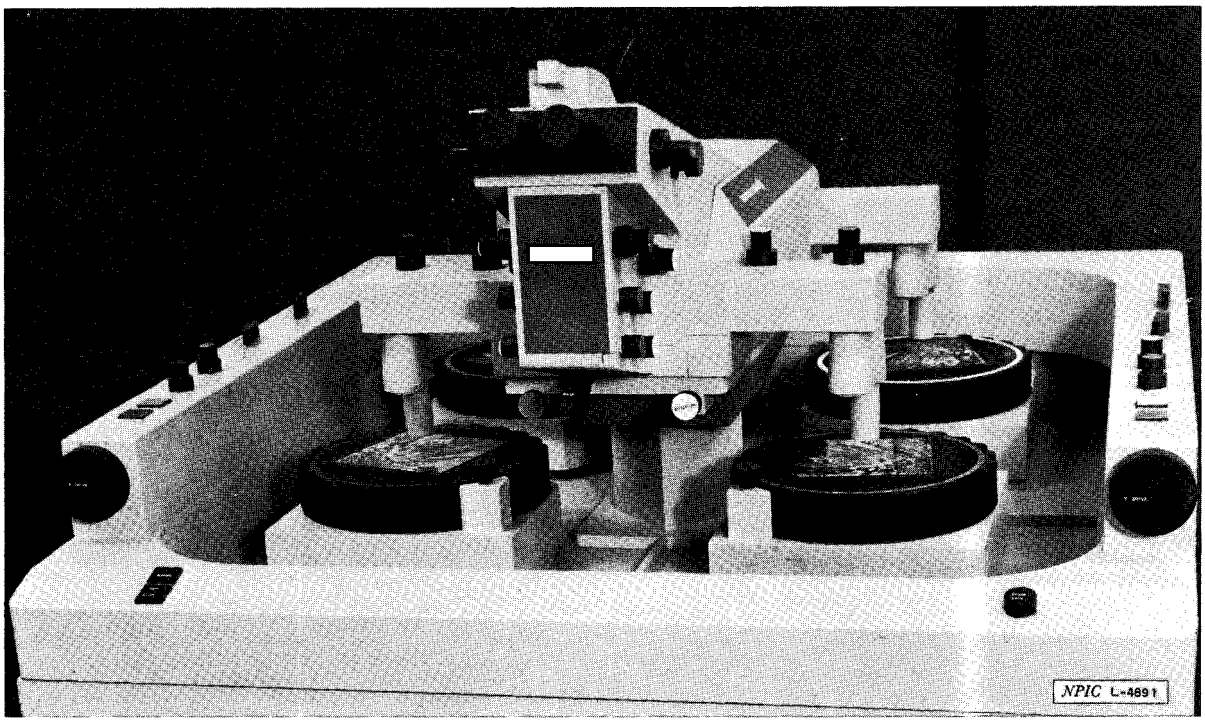
Stereo Viewing Made Easy

The new Split-Format Light Table is designed to allow film with widely separated stereo pairs to be more easily viewed in stereo. Through the use of retracting rollers, a loop of film can be taken out of the center of the format, thus bringing the stereo pairs together. The microscope carriage is capable of handling most standard microscope heads, from the Zoom 70 to the Versatile Stereoscope. By depressing a small button on the carriage, a brake is released and the carriage can be rapidly positioned in the approximate desired position. The carriage can then be accurately positioned by adjusting X and Y positioning knobs. The microscope is brought to an approximate focus by crank, and fine focusing is then performed by means of a separate knob. The light intensity is independently controlled for either side of the table. These capabilities make the Split-Format Light Table the most versatile light table currently at NPIC. The [redacted] 25X1
has just delivered a prototype of this new table (model 940) and it is currently in the Test and Evaluation Section of TSSG. This contract is monitored by [redacted] 25X1

Rapid Comparison of Four Images

A photo interpreter will now be able to compare photographic data, in film chip form, from as many as four different missions or sensors by using the [redacted] Image Comparison Microstereoscope. [redacted] has completed the study phase of a two-phase program (study/fabrication) for an operational prototype of this instrument. This device will view stereoscopically a stereo pair from one mission and then rapidly switch to a stereo pair of

X1 25X



X1

the same area from a different mission. This technique assists in detecting significant changes. The unit will have four independently rotatable and illuminated stages measuring 5 inches by 5 inches. Each optical path will have 10X to 130X zoom magnification, anamorphic correction, image rotation, and a maximum resolution of 600 lines/mm. A decision will be made shortly if phase two should be started. NPIC has received a wooden "Mock-up" and a technical report. [redacted] Room 5S453) is the contract monitor. [redacted]

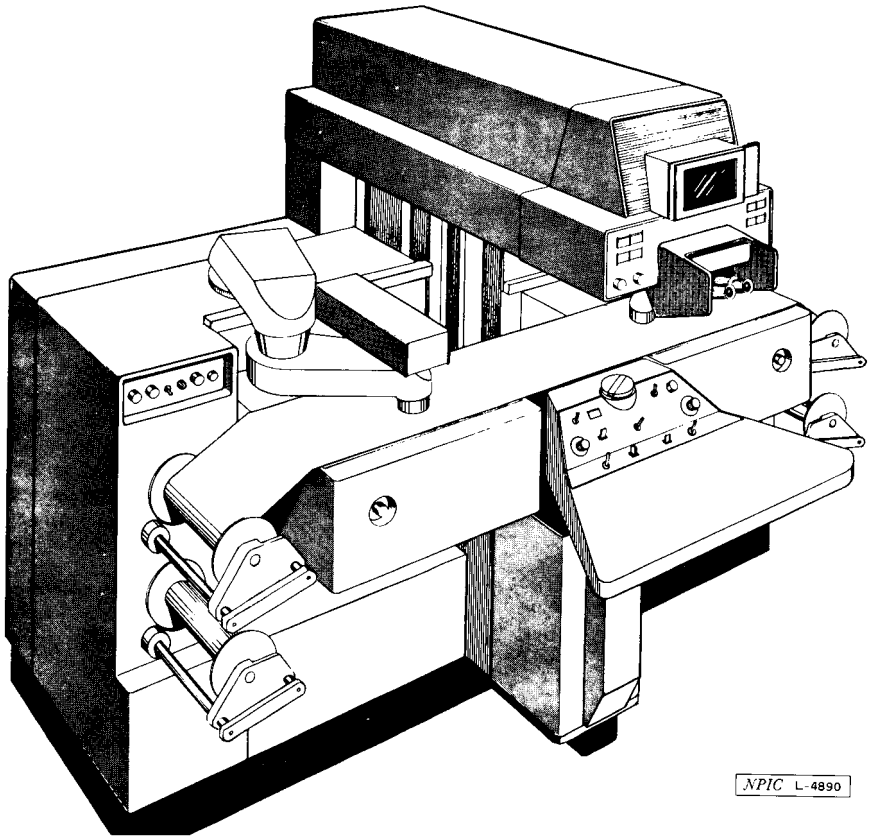
25X

X1

Automatic Stereo Scanning in the Future

A program to develop an instrument that allows a PI to automatically scan stereo film is now in its final design stage. The prototype has been under development for two years and will be delivered about November 1968 for acceptance testing (see photo). The Automatic Stereo Scanner will consist of two principal subsystems: the stereo scanner and the control computer. The stereo console will continuously present to the operator the two images of each stereo pair with the various translation, rotation, scale and skew distortion differences removed. It will zoom from 3.3X to 30X and have a field of view from 2.5 inches to .35 inches. It will be capable of resolving 200 lines/mm at 30X. The computer subsystem will assist in operator setup and control of the stereo scanner. For two of the major camera systems, there are programs which will enable the Automatic Stereo Scanner to locate film coordinates and find stereo conjugate imagery. Other routines will warn of impending loss of stereo correlation and will insure that all the imagery contained on a roll of film is viewed at least once.

X1 [redacted] Room 5S453) is the monitor. [redacted] 25X



A Help to PIs Who Wear Glasses

Photo interpreters who normally wear eye glasses may be able to view
X1 imagery without them by using [redacted] acuity adapters for the Zoom 70. These adapters fit onto the standard 10X eyepieces and individually compensate for nearsightedness and astigmatism. Sets of adapters have been made in accordance with the prescriptions of five PIs and are now available for testing and evaluation. [redacted] Room 5S453B) is the 25X
contract monitor on this project. [redacted] 25X

Improvements Made on Microstereoscope

X1 The [redacted] Twin Dynazoom Microstereoscope is being greatly improved by the efforts of a TSSG Design Engineer and the technicians in the Equipment Performance Branch. Users of this instrument had been seriously inconvenienced because the original design required that each stage be ma-
X1 neuvered independently. [redacted] Room 5S453) of the TSSG Development and Engineering Division has devised a means to overcome this deficiency. With this modification, it will be possible to either move the stages independently or together with a common control. This system will allow the PI to first adjust both chips separately; then by use of this attachment, lock both stages together. Viewing of any location on the chip can then be accomplished by a common motion. If this unit proves to be valuable, more will be produced on contract. [redacted] 25X

* * * Brief News Notes * * *

During the first part of March, the final report on the Human Factors Program will be delivered to NPIC. We want to thank all PIs who helped out during the PI performance testing. More information on this report will follow in future R&D News Notes. [redacted] 25X

For your information, one copy of all final technical reports received by TSSG/DED is placed in the building library.

A final technical report entitled: "An Analysis of Missile Sites as a Function of Photographic Ground Resolution", has been received [redacted] 25X
X1 [redacted] Room 5S453) from [redacted] 25X
X1 [redacted]

R&D NEWS NOTES

(Date)

TO: Editor, R&D NEWS NOTES, TSSG/DED

FROM:

I would like to offer my comments/questions concerning some of the following items.

a. Stereo Viewing Made Easy

b. Rapid Comparison of Four Images

c. Automatic Stereo Scanning in the Future

d. A Help to PIs Who Wear Glasses

e. Improvements Made on Microstereoscope

f. Other